

IMPLEMENTING the MATHEMATICAL PRACTICES

1. **Make sense of problems (ability to explain) and persevere in solving them.**
 - Explain what the problem is about. Do you all agree? If not, explain.
 - How do you plan to solve the problem? How many different plans do you have in your group? Explain them.
 - Does one plan make more sense than the others? Explain.
 - Will you draw a picture or use manipulatives to solve it? Explain why.
 - Explain why your answer makes sense.
2. **Reason abstractly and quantitatively (make sense of quantities).**
 - What do the numbers in the problem mean?
 - Can you draw a picture to show how they are related? If so, show the picture.
 - Do you have all the information you need to solve the problem? If not, what is missing?
 - Is there more than one way to solve the problem? Explain.
3. **Construct viable arguments (justify) and critique the reasoning of others.**
 - Explain how you solved the problem.
 - Justify why your solution makes sense. Do you all agree with how the problem was solved? Why or why not?
 - How is your strategy different from others in the class? How is it like what they did?
4. **Model (number sentence, graph, formulas, etc.) with mathematics.**
 - Can you write a number sentence to help you solve the problem?
 - What did you do first, before writing the number sentence or equation?
 - Did other members of your group have a different number sentence? Explain how they are alike/different.
 - Does one solution make more sense than the other? Why?
5. **Use appropriate tools (pencil and paper, manipulatives, calculators, computer systems, etc.) strategically.**
 - What tool or tools (manipulatives, measuring devices, calculators, protractors, etc.) did you use, and why?
 - Could you have used a different tool? Explain why or why not.
 - Did everyone in your group use the same tool? If not, did theirs make sense? Why or why not?
6. **Attend to precision (state meaning of symbols, specify units, give carefully formulated explanations to others, etc.).**
 - Explain what each number of your number sentence (equation, solution) means.
 - Did you get the right answer? If not, what did you do wrong?
 - Did you label the answer?
7. **Look for and make use of structure (patterns, structure, such as, 3 and 7 more is the same as 7 and 3 more).**
 - Do you see a pattern that will help you solve the problem? If so, what is it?
 - Can you break the problem into easier ones to solve? Explain.
8. **Look for and express regularity in repeated reasoning (repeated calculations – lead to shortcuts).**
 - Does your answer make sense? Explain.
 - Have you solved another problem like this before? If yes, explain how it helped you solve this problem.